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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,029	06/22/2001	Jin-Ho Park	06192.0202.NPUS00	4778

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McGuire Woods LLP
1750 Tysons Boulevard Suite 1800
McLean, VA 22102

EXAMINER

LIU, MING HUN

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,029

Applicant(s)

PARK ET AL.

Examiner

Ming-Hun Liu

Art Unit

2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 8-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

2. The drawings are objected to because it is unclear as to how the delay timing will work in the entire m-row x n-column matrix. It is suggested that the applicant include a drawing that includes the connections of the flip-flops in respect to the entire matrix. In order to further facilitate the understanding of the inventions, it is also suggested that the applicant include a timing diagram, explaining the timing of the delay circuit and flip-flop information. Figures 2 and 3 seem to demonstrate the propagation of data in the direction of the columns, which is in conflict with the claim limitation of propagating in the direction of the rows. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because from the specifications on pages 6 and 7, it is unclear as to exactly how the delay timing arrangement will be applied in the full m x n matrix. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, it is unclear as to what results the term ‘the result’ in line 9, is referring to. There is insufficient antecedent basis for this term.

Secondly, Claim 1 is written in a way that makes the claim difficult to read and understand. The following is a suggestion to help clarify the reading of the claim. “a clock signal delaying unit for gradually delaying the clock signal applied to said memory devices starting from an (m)th row memory device that outputs data, progressing toward the row of memory devices (row 1) where data are inputted; and a data delay unit for delaying the data for a delay time of a clock signal that is applied to an input side of the memory device.”

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being unpatentable by US Patent 3,708,690 to Paivinen.

In reference to claims 1 and 2, it can be seen from figures 2 and 3 that Paivinen teaches an m-row x n-column matrix and shifting data synchronized with a clock signal. Paivinen teaches a delay unit that gradually delays the clock from the (m)th row memory device (in the case of the reference nth stage) to the first row memory device (column 1, lines 40-44 and lines 55-65). The delay unit also delays the input of the data (column 1, line 60-62). Specifically, Paivinen discloses a method where the clock signals are one-to-one matched to the row memory devices (figure 2) with delay time in increased order from (m-1)th, (m-2)th ... to 1st row.

In reference to claim 3, it is clearly seen in figure 2 that the delay portions are of delay time t, 2t, ... (m-1)t.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paivinen in view of US patent 5,245,326 to Zalph.

In reference to claims 8-13, Paivinen teaches a shift register that resembles the register being claimed.

Paivinen does not discuss incorporating the register onto LCD displays.

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However, one skilled in the art understands that it is extremely conventional, if not inherent, for LCD displays to have shift registers. It can be seen from Zalph's figures and disclosure on column 3, lines 23-27, that shift registers are used in column, scanning, and controller circuits in LCD displays.

It would have been obvious to incorporate Paivinen's shift register into an LCD drive circuit such as the one disclosed in Zalph because of the power and component saving advantages that Paivinen's register provide.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on 703-305-9720. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Ming-Hun Liu


STEVEN SARAS
SUPERVISORY PATENT EXAMINER
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